

ABSTRACT

1
2 An induction coil suitable for use either as a rotor or a stator in electromotive
3 devices such as an electric motor, an alternator or a generator. The induction coil is made
4 by stamping, etching or machining slots in plural metallic sheets. The metal between the
5 slots on each slotted sheet constitute a plurality of substantially parallel electrical
6 conductors. In a preferred embodiment of the induction coil, the individual slotted sheets
7 are stacked to include two or more sheets, with the conductors of the top sheet
8 substantially filling the slots in the bottom sheet, then rolled into a first cylindrical
9 member. The process is repeated with a second stack of slotted sheets to form a second
10 cylindrical member having a different diameter than the first cylindrical member. The
11 first and second cylindrical members are coaxially assembled in axial alignment to form
12 an assembled cylindrical member. The appropriate conductors on the first and second
13 cylindrical members are electrically interconnected then the first and second cylindrical
14 members are impregnated and encapsulated with a suitable electrically insulating material
15 to form a free-standing cylindrical tube. The conductors are then electrically isolated and
16 a connector ring is affixed to the end of the tube to form an induction coil by establishing
17 suitable electrical interconnection between the conductors on the individual slotted
18 members. The construction permits the thickness of the conductors to be increased and
19 the width of the slots between adjacent conductors in the assembled coil to be decreased
20 thereby reducing conductor resistance and increasing both the conductor density and the
21 current carrying capability of the conductors in the assembled coil.